ON A NEW SPECIES OF SINISTRAL *LIMNÆA*, FROM CENTRAL AUSTRALIA, WITH SOME REMARKS ON SO-CALLED SPECIES OF *PHYSA*, ALSO FROM AUSTRALIA.

By the REV. A. H. COOKE, M.A., F.Z.S.
Curator in Zoology, Cambridge.

(Read before the Conchological Society.)

Some years ago, ten or a dozen specimens of a fresh-water shell were sent from Australia to my friend, Mr. H. M. Gwatkin, of St. John's College, Cambridge, the exact locality being given as "Paroo Creek, River Darling, 90 miles north of Mount Murchison." The shell was sinistral, the dentition Mr. Gwatkin at once determined to be that of a typical *Limnæa*, such as our own *stagnalis* or *peregra*.

Failing to find the species described in the Monographs, it occurred to me the other day to take specimens to the British Museum, to see if the shell were known there. I found that the species is probably new, but closely allied to two other sinistral species in the British Museum, both from Australia.

These however, curiously enough, were described, and have always been regarded as *Physa*, not as *Limnæa*. They are :—

1. **Physa Hainesii** Tryon, Amer. Journ. of Conch., vol. ii., p. 9, pl. ii,, fig. 9.
   „ „ Smith, Journ. Linn. Soc. Zool., vol. xvi., On the Freshwater Shells of Australia, p. 281.
   „ „ Küster, Mart. and Chem. Conch. Cab., *Physa*, nr. 252, p. 366, taf. 49, fig. 1.
   „ **latilabiata** Sowb., Conch. Icon., vol. xix., *Physa*, fig. 33, *a. b.*
   „ **Schayeri** Troschel, Mus. Berolin.

Locality: Australia (W. Newcomb, M.D.), India? (W. A. Haines), Victoria R. and Depuch I., N. Australia (Smith).

Described by Tryon as an *Isidora*, which subgenus, however, seems peculiar to Africa (see the monograph in Küster).

2. **Physa Newcombi** Ad. and Ang. P.Z.S., 1863, p. 416.
   „ „ Smith, Journ. Linn. Soc. Zool., vol. xvi., On the Freshwater Shells of Australia, p. 280.
   „ „ Sowb., Conch. Icon., vol. xix., *Physa*, fig. 21.
   „ „ Küster, Mart. and Chem. Conch. Cab., *Physa*, nr. 131, p. 299, taf. 43, fig. 6.

Locality: Ponds near Mount Margaret, Stuart's Expedition (Angas).

Type in Mus. Brit.

There is no evidence, in the descriptions of these two shells, that their authors examined the animal. The shells being sinistral, and rather large and ventricose, it probably did not occur to them that they were anything else but *Physa*, or that it were possible, perhaps, for a species of *Limnæa* to be permanently reversed. Mr. Gwatkin's examination of the animal of our shells was confined to the dentition, but was sufficient to establish beyond the possibility of a doubt that they were *Limnæa* and not *Physa*. If, therefore, we find that on conchological grounds these two other species from the same part of Australia, hitherto described as *Physa*, approach very closely to ours, there are strong grounds for believing—in the absence of the certainty which an examination of the radula would afford—that they also are *Limnæa*.

In a question like this, an examination of the type specimens is the most convincing test that can be applied.* The outer surface of the shell, in all these three species, is that of a

* I will place the type specimen of the new species in the Mus. Brit.

Limnæa and not of a *Physa*, a surface comparatively coarse and rough, with none of the polish and lustre which is seen on the shell of a *Physa*, and which is produced by the constant movement of the expanded mantle lobes which cover its outer surface. Add to this the exceeding deep suture, the gaping umbilicus, and the very strongly reflected columella. Smith, on "*Physa Newcombi*," remarks *(ut supra)*, "the great development of the labium is very unusual in this genus."

Sinistral species of *Limnæa* exist, according to Tryon, "Structural and Systematic Conchology," vol. iii., p. 101, in New Zealand and the Sandwich Islands. He makes no mention of any in Australia.

I will now describe the shell which appears to me a new species of *Limnæa*.

Limnæa physopsis n. sp., plate ii., figures 1—4.

Shell sinistral, very ventricose, solid, opaque, scarcely lustrous, horn colour, with bands of deeper colouring at the lines of growth, strongly striated lengthwise, with faint indications of keels here and there on the last whorl; Epidermis thick; Whorls 4, the last occupying nearly all the shell; Spire blunt and flattened; Suture very deep; Mouth very large, rotundate-oval; Outer Lip rather strong, not reflected; Inner Lip strongly reflected on the columella; Umbilicus large and deep; length ·75 inch, breadth ·75 inch.

Habitat, Paroo Creek, River Darling, Australia.

Type, in the British Museum.

For purposes of comparison, I add (pl. ii., figs. 5, 6) drawings from photographs of the radula of *Limnæa physopsis* × 72, and of a typical *Physa* (*acuta*. Lam.) × 210.